REMARKS/ARGUMENTS

Status of Claims

Claims 1-23 are pending in this application, with claims 1, 16, and 21 being independent. Claims 1, 16, and 21 have been amended.

Overview of the Office Action

Claims 16-23 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 1-12 and 14-23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tonnby (WO 98/24224) in view of Baum (U.S. 6,850,495). Claims 11-13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Tonnby in view of Baum and Lang (U.S. 6,188,699).

Rejections Under 35 U.S.C. § 101

The Examiner has maintained the rejection of claims 16-23 as being directed to non-statutory subject matter. As Applicants understand the Examiner's position, the claims are non-statutory because the claimed mediation module might be software *per se*. While Applicants respectfully disagree with this position, for the reasons presented in previous responses, claims 16 and 21 have nevertheless been amended to foreclose the interpretation that the mediation module is software *per se*.

Claim 16, for example, has been amended to recite that the "access system comprises a mediation module, the mediation module comprising memory and a processor." Claim 21 has been similarly amended. These amendments make it clear that the mediation module is not software *per se*.

Support for these amendments may be found throughout the specification. In particular, the specification describes the mediation module (4) as being a device that communicates via the network: "[t]he mediation module 4 dialogues with the system 5 via the network 2." (page 9, lines 24-25). Moreover, the mediation module has a database in which it stores information: "[t]he 'Resource request' function of the mediation module 4 updates the database of the module, associating the 'Access network channel location identifier' field with the IP service description information." (page 11, lines 18-22). Thus, one of ordinary skill in the art would readily understand that the mediation module has memory and a processor.

Summary of Subject Matter Disclosed in the Specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

The embodiments disclosed in the present application relate to a method and/or system used by a terminal (T) to access, via a multipath access network, a service made available on a communication network by a service provider.

The term "multipath access network" refers to a network in which services are accessed via one of multiple channels (i.e., a "multichannel access network") or via one of multiple interfaces of the terminal. The general context of the invention is that of a service provider seeking to deliver an IP service, such as video streaming or downloading, to client terminals connected to a "multichannel" IP access network or to a plurality of IP access networks via a plurality of interfaces of the terminal. The term "path" is applied interchangeably to a channel of

a multichannel access network and to an interface of a terminal. (See specification at page 1, lines 3-27).

An access network is referred to as a "multichannel" access network if it contains either one physical medium providing a plurality of logical channels or a plurality of physical media. The term "channel" may be applied interchangeably to one of the logical channels on the one physical medium or to one of the plurality of physical media. (See page 1, lines 28-34).

In a multichannel access network, for example, the terminal must have certain parameters for connecting to the access network, in addition to the IP address of the service, in order to connect to the correct channel (i.e., logical channel or physical medium). Otherwise, the terminal might have to systematically search all existing channels for an appropriate communication route to the desired IP service. (See page 2, line 36 to page 3, line 4).

The disclosed method includes a step of supplying a mediation module (4) with information from the service provider (S) which relates to at least an address of the service in the communication network. For example, the service provider (S) may supply to the mediation module (4) the elements of a standard SDP description file, including (see page 9, line 33 to page 10, line 11):

(i)   application-level information, e.g, the name and literal description of the service, the date of broadcasting of the service, and the application needed to decode the service, the type of codecs, etc.; and

(ii)   network-level data, e.g., the multicast IP address and the UDP port necessary to communicate with the multicast IP service.

The mediation module (4) determines a path identifier to be used by the terminal (T) to access the service via the multipath access network and associates the path identifier with the

information supplied by the service provider (S). For example, the mediation module (4) may send a "resource request" to a control host (5) that controls the multipath access network (1) and may then receive from the control host (5) an identifier for determining the channel to be used to deliver the IP service over the multipath access network (1). (See page 10, line 27 to page 11, line 22). The terminal (T) receives the path identifier associated with the desired IP service from the mediation module (4) during service discovery. (See page 11, line 34 to page 12, line 22).

Descriptive Summary of the Cited Art

Tonnby relates to a general access system for providing access to communication services, such as telecommunications, data communications and distribution of TV and radio (see Abstract, lines 1-2). According to Tonnby, "[t]he general access system ... comprises a connectivity network, at least one access adapter, to which at least one service providing network is connected, and at least one network terminal, to which at least one terminal is connected" (see pg. 10, lines 4-7). Service access points (SAPs) (72) are used to characterize network services using a set of service primitives, e.g., stream services and control messages. The SAPs are distributed to access adapters (40) connected to the service providing network (50). The access adapters (40) form a set of service access points (72), of which there may be at least one for each user.

Baum relates to an aggregation unit for aggregating physical connections from customers for presentation to an access router and for de-aggregating traffic from a shared link from the access router (see col. 7, lines 60-63).

Lang relates to "a multi-channel network device for interfacing between a plurality of physical data links and a control processor, where each physical data link is characterized by a

data stream of data packets communicated according to a data link control protocol" (see col. 1, lines 52-57).

Patentability of the Independent Claims over the Prior Art

Independent claim 16, as amended, recites "an access system used by a terminal (T) to access via a multipath access network a service made available on a communication network by a service provider, the multipath access network having multiple channels and/or multiple interfaces with the terminal." Claim 16 further recites: "wherein said access system comprises a mediation module, the mediation module comprising memory and a processor, the mediation module being configured to: receive from the service provider information relating to at least an address of said service in the communication network, determine a path identifier to be used by the terminal (T) to access said service via the multipath access network and associate said path identifier with said information supplied by the service provider (S), and supply the terminal (T) with said path identifier associated with said information during service discovery."

As discussed above, in a multichannel access network, the terminal must have certain parameters for connecting to the access network, in addition to the IP address of the service, in order to connect to the correct channel (i.e., logical channel or physical medium). Otherwise, the terminal would have to systematically search all existing channels for an appropriate communication route to the desired IP service. (See page 2, line 36 to page 3, line 4).

The references cited by the Examiner do not address this problem, because they do not disclose an access system that connects terminals via a multipath network. *A fortori*, the cited references do not disclose a path identifier to be used by a terminal to access a multipath network.

Thus, the combination of references cited by the Examiner does not teach or suggest a system for connecting terminals via a "multipath access network having multiple channels and/or multiple interfaces with the terminal," as recited in claim 16, nor does the cited combination of references teach or suggest a mediation module configured to: "receive from the service provider information relating to at least an address of said service in the communication network," and "determine a path identifier to be used by the terminal (T) to access said service via the multipath access network," as further recited in claim 16.

The Office Action cites Tonnby as disclosing a multipath access network. However, Tonnby actually discloses a connectivity network (10) that uses only single channels or single interfaces with the user terminals (20). In the Tonnby system, each user terminal (20) is connected to a network terminal (30). The network terminals (30) are connected to access adapters (40) via the connectivity network (10). Each access adapter (40) is connected to one of a number of service providing networks (50).

Tonnby mentions the possibility of using broadcast networks to transmit data. However, in such a case, the user must select a specific channel using a set top box or by requesting a specific channel through an access adapter (40). (See Tonnby at page 33, lines 1-15). This is the sort of approach that the present application describes as being undesirable.

The Office Action cites Baum as disclosing the claimed path identifier. However, Baum merely discloses a virtual path identifier (VPI), which is used to set up virtual private network connections in single channel or single interface networks. Baum, as noted above, is not concerned with making connections in a multipath access network.

The Examiner, at page 10 of the Office Action, asserts that one of ordinary skill in the art would have been motivated to use the VPIs disclosed in Baum with the system disclosed in

Tonnby because "it would allow control of 'access to various services and locations.'" However, Tonnby discloses service access points (72) which are used to characterize network services using a set of service primitives. Thus, Tonnby already provides a way of controlling access to network services, so one of ordinary skill in the art would have had no reason to turn to Baum for this functionality. The Examiner's rationale is therefore inadequate to support *prima facie* obviousness.

Accordingly, claim 16 is deemed to be patentable over the combination of Tonnby and Baum.

The other cited reference, Lang, was cited by the Examiner as purportedly disclosing certain features recited in the dependent claims. Nothing has been found in Lang that would remedy the deficiencies of Tonnby and Baum with respect to the features of claim 16 discussed above.

Independent claims 1 and 21, as amended, recite features similar to claim 16 and are therefore also deemed to be patentable over the cited combination of references for reasons discussed above with respect to claim 16.

Claims 2-15, 17-20, 22, and 23, which each depend from one of independent claims 1, 16, and 23, distinguish the invention over the applied prior art for reasons discussed above in regard to their corresponding independent claims as well as on their own merits.
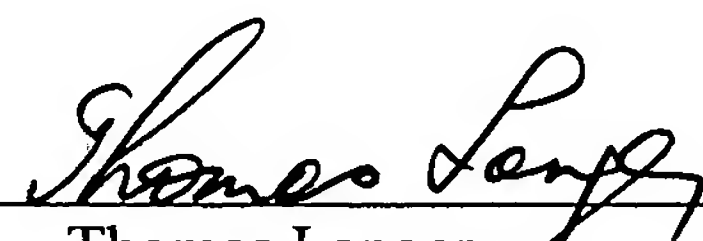

Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
COHEN PONTANI LIEBERMAN & PAVANE LLP

By _____
Thomas Langer
Reg. No. 27,264
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

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